



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,320	08/01/2003	Gerard J. Hayes	9314-43	5223
20792	7590	11/29/2004	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			TRAN, CHUC	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			2821	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/632,320

Applicant(s)

HAYES, GERARD J.

Examiner

Chuc D Tran

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 13, 14, 16-19, 21, 22, 27, 28 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 7, 9-12, 15, 20, 23-26, 29 and 30 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/25/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8, 13-14, 16-19, 21-22, 27-28 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Arkko et al (USP. 6,201,501).

Regarding claim 1, Arkko et al disclose a wireless terminal comprising :

- a housing (141) (Arkko, Fig. 1);
- an electronic circuit (101) disposed within the housing (141) (Arkko, Fig. 1);
- a flat-panel speaker (205) positioned proximate a back side of the electronic circuit (201 or 101)) within the housing (Arkko, Fig. 1 & 2) (Col. 4, Line 4); and
- an internal antenna (203) positioned proximate the flat-panel speaker(205) on the back side of the electronic circuit (201) within the housing (Arkko, Fig 2).

Regarding claim 2, Arkko et al disclose that the flat-panel speaker (205) is integrated with the internal antenna (203) (Arkko, Fig. 2).

Regarding claims 3 and 22, Arkko disclose that the flat-panel speaker (205) and the internal antenna (203) each comprise conductive portions that reside on a first primary surface of a common substrate (Arkko, Fig. 1 & 2).

Regarding claim 4, Arkko disclose that the internal antenna (103) is a planar antenna (Arkko, Fig. 1).

Regarding claim 5, Arkko disclose that the housing (141) includes an earpiece (143) (Fig. 1) and a keyboard on a front face of the housing (Arkko, Fig. 6), and wherein the electronic circuit (201) (Arkko, Fig. 2) is positioned between the front face of the housing (141) and the flat panel speaker (205) and internal antenna (203) (Arkko, Fig. 1 & 2).

Regarding claim 6, Arkko disclose that the electronic circuit comprises a printed circuit board (101), and wherein the wireless terminal further comprises a forward acoustic passageway (109) extending from the flat-panel speaker (105) to the earpiece (143) (Arkko, Fig. 1), the forward acoustic passageway (202) (Arkko, Fig. 2) comprising at least one acoustic aperture extending through the printed circuit board (201) adjacent the flat-panel speaker (205) (Arkko, Fig. 2).

Regarding claim 8, Arkko et al disclose that the electronic circuit comprises a printed circuit board (101) having a signal feed (151) and a ground plane (Col. 3, Line 39), and wherein the internal antenna (103) is operatively coupled to the signal feed (151) and the ground plane (101) (Col. 3, Line 39) (Arkko, Fig. 1).

Regarding claims 13 and 27, Arkko disclose that the flat-panel speaker (205) is configured to act as a parasitic element to the internal antenna (203) (Arkko, Fig. 2) (Arkko, Col. 4, Line 4).

Regarding claims 14 and 28, Arkko disclose that the flat-panel speaker is configured to act as a parasitic element that provides a lower frequency range frequency response for the internal antenna Arkko, Col. 3, Line 1)

Regarding claims 17 and 31, Arkko disclose that the internal antenna (203) comprises a planar inverted-F antenna (PIFA) (Arkko, Fig. 2).

Art Unit: 2821

Regarding claims 18 and 32, Arkko disclose that the internal antenna (203) comprises a single-contact patch antenna (Fig. 2).

Regarding claims 19 and 33, Arkko disclose that the internal antenna (605) comprises a monopole antenna (601) (Arkko, Fig. 6).

Regarding claim 21, Arkko et al disclose an antenna subassembly comprising:

- a planar antenna (103) (Arkko, Fig. 1); and
- a flat-panel speaker (105), wherein the flat-panel speaker is integrated with the planar antenna (103) (Arkko, Fig. 1).

***Allowable Subject Matter***

3. Claims 7, 9-12, 15, 20, 23-26 and 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Citation of relevant prior art***

Prior art Brouwers et al (USP. 6,061,037) disclose flex antenna structure.

Prior art Tilford et al (USP. 5,915,020) disclose portable satellite earth station.

Prior art Camp, Jr. (USP. 6,411,826) disclose patch antenna.

Prior art Polacsek (USP. 4,362,907) disclose Radio and Speaker assembly.

Prior art Kumada et al (USP. 4,352,961) disclose flat panel speaker.

Prior art Wang et al (US. 2003/0216157) disclose wireless communication apparatus with a flat speaker.

***Inquiry***

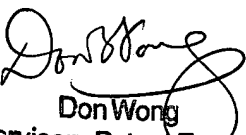
Art Unit: 2821

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuc D Tran whose telephone number is (571) 272-1829. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TC  
November 14, 2004

  
Don Wong  
Supervisory Patent Examiner  
Technology Center 2800